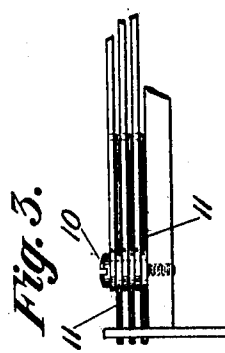
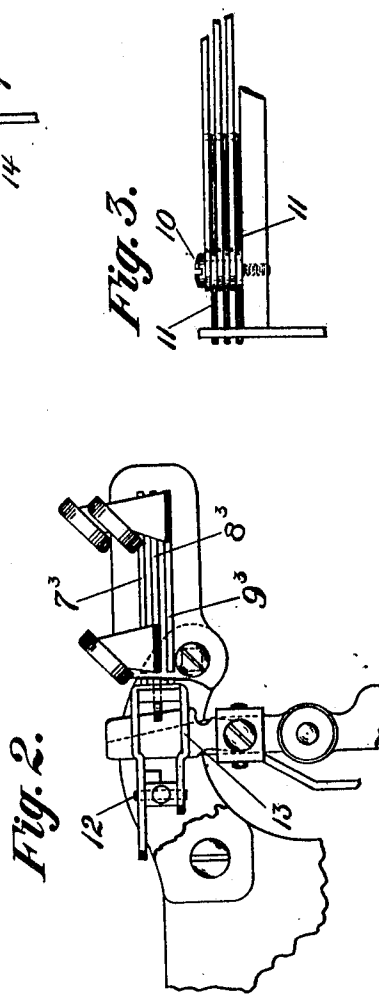
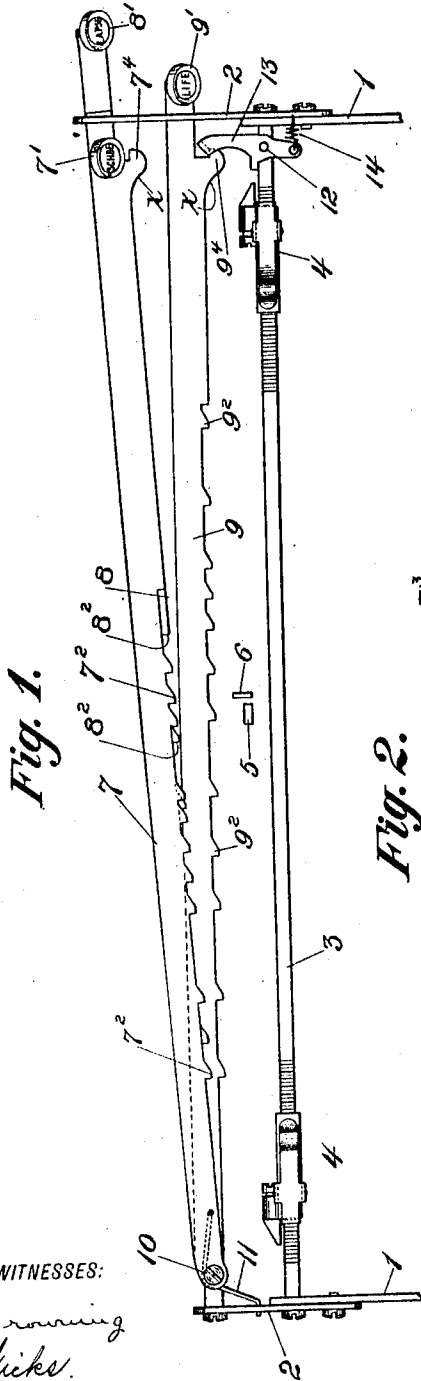


E. B. HESS.
TYPE WRITING MACHINE.
APPLICATION FILED OCT. 2, 1908.

947,443.

Patented Jan. 25, 1910.



INVENTOR
Edward B. Hess
BY
Edward C. Davidson
ATTORNEY

UNITED STATES PATENT OFFICE.

EDWARD B. HESS, OF NEW YORK, N. Y., ASSIGNOR TO ROYAL TYPEWRITER COMPANY,
OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY

TYPE-WRITING MACHINE.

947,443.

Specification of Letters Patent. Patented Jan. 25, 1910.

Application filed October 2, 1908. Serial No. 455,919.

To all whom it may concern:

Be it known that I, EDWARD B. HESS, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to tabulator devices for typewriting machines.

It is indicated in the drawing as applied to a front strike machine but is applicable to other types of machines.

The invention comprises the use of a plurality of tabulator bars having different column or tabular stops formed thereon or carried thereby.

In the form in which the invention is shown embodied the several tabulator bars are on the carriage and they coöperate with a center stop on the frame, but the invention is not limited to the special form shown. Also the tabular stops on the bars are formed by projections or teeth on the bars, but they might be otherwise provided and if separate from the bars they may be, of course, adjustable in conformity to well known practice. The several tabulator bars are each capable of being thrown into and out of operative position and preferably the arrangement is such that when one bar is thrown into operative position another which may be in such position is automatically retracted or moved out of operative position. The several tabulator bars are shown as pivoted at one end and about such pivots they are swung into and out of operative position but the invention is not limited to that special arrangement. One of the advantages of the employment of such a plurality of tabulator bars is that in cases of special work, as for instance in filling out insurance blanks, certain definite column work is required, and the typewriting machines may be equipped with a tabulator bar for each arrangement of columns, and it is only necessary for the operator to throw into operative position that one of the bars at any time required. This affords a quicker and more certain adjustment of the tabulator devices than can be had by the adjustment of a plurality of tabular stops upon a single bar.

In the accompanying drawings: Figure 1

is a detail plan view: Fig. 2, a detail side elevation: and Fig. 3, a detail front elevation.

1, 1, indicate the end plates of the carriage of a front strike machine, from which extend rearwardly, at each end of the carriage, plates 2, shown as separately formed and bolted to the plates 1. Extending between the ordinary end plates 1 is a bar 3 notched adjacent its ends and carrying adjustable margin stops 4 such as are shown in my Patent No. 878,892, dated December 24, 1907. In rear of the bar 3 is the forwardly and backwardly movable frame stop composed of two members 5, 6, such as shown in said Patent No. 878,892. The stop 5, 6, may as shown in that patent be operated or controlled by a key in the keyboard of the machine. The rigid part 5 of the frame stop coöperates with the margin stop 4 located at the left side of the machine; and the yielding spring member 6 coöperates with the margin stop at the right hand side of the machine and with the tabular or column stops. In yielding the member 6, until arrested by the rigid member 5, throws into operation a line lock both when the member 6 engages a tabular stop and the margin stop at the left of the machine. As shown and described in said patent there may be a margin release key. The tabulator key in the board serves to throw the frame stop rearwardly so that it will engage the tabular stops yet to be described. All this is shown in my Patent No. 878,892 and is well understood.

The present invention is shown embodied as follows: In rear of the frame stop 5, 6, there is a plurality of tabular stop bars, three being shown and marked 7, 8, 9. They are all pivoted upon a common pivot bolt 10 mounted in brackets at the left hand side of the carriage. They are spaced thereon by washers about which respectively are coiled reaction springs 11 each having one free end applied to the plate 2 and its other end to its tabulator bar. The reaction of these springs tends to throw the other ends of the bars rearwardly. The last named ends of the bars are turned up and equipped with finger pieces 7', 8', 9'. These finger pieces may contain words or letters indicating the

special arrangement of columns that any particular work requires. The bars have, respectively, tabular stops 7², 8², 9² that are of such number and so arranged as may be desired. The several bars are shown as of mere flat sheet metal and all of them are guided in slots 7³, 8³, 9³ in the side plate 2 at the right hand side of the machine. Each bar has a catch projection of which that 7⁴ on bar 7, and 9⁴ on bar 9 are observable in the plan view Fig. 1, and each of such catch projections has a cam surface *x*. Pivoted on a pin 12, that may be mounted in the margin stop bar 3, is a bail-shaped spring latch 13 common to all the catch projections of the tabulator bars, and having applied to it a reaction spring 14. All the faces *x* cam back this latch against its spring and the catch projection on each bar is engaged by the latch. When a tabulator bar is swung forward into position so that its column stop tooth may be engaged by the member 6 of the center stop, it is caught and held by the spring latch. When another tabulator bar is needed it is swung forward and its cam face *x* snubs back the latch to release the bar in operative position, which is then retracted by its spring, and the bar so moved forward is caught and retained in operative position by the spring latch.

The general construction described permits of the tabular bars being in the form of flat blades having integral projections constituting the tabular stops. Each bar is light and strong and any desired number

may be used since each occupies very little space vertically.

I claim:

1. Tabulator devices comprising a plurality of tabular bars each having tabular stops and adapted to move into and out of operative position, and means whereby a tabular bar that is in operative position is automatically moved out of it when another of the bars is moved into operative position.

2. Tabulator devices comprising a plurality of tabular bars each having tabular stops and adapted to move into and out of operative position, and means whereby a tabular bar that is in operative position is automatically moved out of it when another of the bars is moved into operative position and a cooperating stop common to all the bars.

3. Tabulator devices comprising a plurality of independent flat metal tabular bars placed with their flat faces opposite one another and each adapted to be independently moved into and out of operative position.

4. Tabulator devices comprising a plurality of independent flat metal tabular bars each pivoted at one end and placed with their flat faces opposite one another and each adapted to be independently swung into and out of operative position.

In testimony whereof, I have hereunto subscribed my name.

EDWARD B. HESS.

Witnesses:

L. F. BROWNING,
E. F. WICKS.